

REMARKS

Claims 1, 7, 14, 19, 33, and 37 have been amended, and claims 1 to 5, 7, 10 to 21, 25 to 27, 29, 32 to 34, 37, and 40 to 44 remain pending in this application. Applicants now address each and every point raised by the Examiner in the above-identified office action as follows:

I. Rejection of Claims Under Section 103

Claims 1-5, 7, 10-21, 25-29, 32-34, 37 and 40-44 have been rejected under 35 U.S.C. § 103 as being allegedly unpatentable over Heinrich in view of Fujita.

A. Independent claims 1, 14 and 33

Applicants have amended claims independent claims 1, 14 and 33 to include the invention feature recited in respective dependent claims 7, 19 and 37; namely, that the binder alloy comprise in the range of from about 10 to 30 percent by weight cobalt. Further, these claims recite the invention feature that the binder alloy has a specific coefficient of thermal expansion as being 10 ppm/°C within a temperature range of from 100 to 700°C (claims 1 and 33).

Heinrich discloses a cermet insert comprising a Co-Ni-Fe binder, wherein such binder was developed to replace a Co only binder for the purpose of avoiding problems due to the unavailability of Co, and providing improved corrosion resistance. While Heinrich does disclose the use of a binder

comprising Co, Ni and Fe, as noted by the Examiner, Heinrich fails to disclose or suggest the additional use of C and Mn to form the binder as recited in Applicants' claims.

Further, Heinrich discloses that such binder comprise "at least about 40 percent by weight cobalt." Heinrich fails to disclose or suggest a binder alloy as recited in Applicants' amended independent claims comprising 10 to 30 percent by weight cobalt.

The Examiner alleges that Fujita is in the same field of endeavor and that it discloses adding the additional alloying agents of C and MN to the binder. However, Fujita fails to disclose or remotely suggest a binder alloy comprising about 10 to 30 percent by weight cobalt as recited in Applicants' amended independent claims.

Accordingly, Applicants submit that one skilled in the art of looking at the combination of Heinrich and Fujita would not be motivated make a cermet material comprising an amount of cobalt in the binder alloy that is missing in each. Thus, one skilled in the art would not find Applicants' cermet material are cited in these amended independent claims to be obvious based on the combination of Heinrich and Fujita.

Applicants, therefore, respectfully request that the rejection of these claims, and the claims depending therefrom, under 35 U.S.C. § 103 be reconsidered and withdrawn.

Applicants further submit separately that the subject matter recited in dependent claims 3, 4, 5, 7, 11, 12, 16, 17,

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18, 19, 20, 21, 34, 37, 41 and 42 is not disclosed or suggested by either Heinrich or Fujita alone or in combination.

With respect to claim 41, this claim introduces in the cermet material the presence of a further ductile binder phase, which is not disclosed or even remotely suggested in either Heinrich or Fujita taken alone or in combination.

B. Independent claim 25

Claim 25 recites a three phase low coefficient of thermal expansion cermet material; namely, one comprising a first phase of grains (e.g., a carbide), a second phase of binder alloy having a specified coefficient of thermal expansion, and a third phase comprising the first and second phases disbursed therein.

Applicants submit that neither Heinrich nor Fujita, alone or in combination, remotely disclose or suggest such three-phase cermet material. For this reason, Applicants submit that its cermet material as recited in claim 25 is not obvious to one having ordinary skill in the art over the combination of Heinrich and Fujita, and therefore respectfully request that the rejection of independent claim 25, and the claims depending therefrom, under 35 U.S.C. § 103 be reconsidered and withdrawn.

C. Independent claim 43

Claim 43 recites a low coefficient of thermal expansion cermet having a specific material microstructure comprising first and second structural phases. The cermet material comprises a

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number of structural units that are repeated within the material and that are each formed from the first and second phases. Neither Heinrich nor Fujita, alone or in combination, disclose or remotely suggest this invention feature.

Further, claim 43 recites that the ductile binder material, used to form the second structural phases, have a specific coefficient of thermal expansion property, also not disclosed or suggested in either Heinrich or Fujita alone or in combination.

Still further, claim 43 recites that the cobalt content in the ductile binder material be within the range of from 10 to 30 percent by weight. As noted above, Heinrich discloses that the cobalt content is greater than 40 percent.

For all of these reasons, Applicants submit that neither Heinrich nor Fujita, alone or in combination, remotely disclose or suggest the cermet material recited in independent claim 43. Thus, Applicants' invention recited in claim 43 would not be obvious to one having ordinary skill in the art based on the combination of Heinrich and Fujita. Applicants, therefore, respectfully request that the rejection of independent claim 43, and claim 44 depending therefrom, under 35 U.S.C. § 103 be reconsidered and withdrawn.

II. Conclusion

For the reasons presented above, Applicants respectfully request that the rejection of the claims under 35

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U.S.C. § 103 be reconsidered and withdrawn, and that the claims pending in this patent application be passed to allowance. If, after evaluating this response, the Examiner does not believe that the claims are in allowable conditions, Applicants respectfully request that the Examiner please contact its below-identified patent attorney for the purpose of discussing the same.

The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

If any additional fees are necessary in this matter, please charge our Deposit Account No. 10-0440.

Respectfully submitted,

JEFFER, MANGELS, BUTLER & MARMARO LLP

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By: 

Grant T. Langton, Esq.
Reg. No. 39,739
1900 Avenue of the Stars
Seventh Floor
Los Angeles, CA 90067-4308
(310) 203-8080
Customer No. 24,574

GTL/

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